



Argonne National Laboratory Overview



About Argonne

Pioneering Science and Technology

- **Founded in 1943, designated a national laboratory in 1946**
- **Managed by University of Chicago for the Department of Energy**
 - **~4000 Employees and 4000 facility users**
 - **~\$480M Budget**
 - **1500-acre site in Illinois**
 - **800-acre site in Idaho**
- **Broad R&D portfolio**
- **Numerous sponsors**



Argonne's Mission

- **Serve DOE & national security needs**
 - Advancing the frontiers of knowledge
 - Creating and operating forefront scientific user facilities (e.g. Advanced Photon Source, Intense Pulsed Neutron Source, Argonne Tandem-Linac Accelerator)
 - Providing tools and solutions for energy and environmental challenges to national and global well-being, in the near and long term
- In accomplishing its mission, Argonne partners with other federal labs, academia, and the private sector

Pioneering Science and Technology

Advanced Photon Source



Scientific and Technical Core Competencies

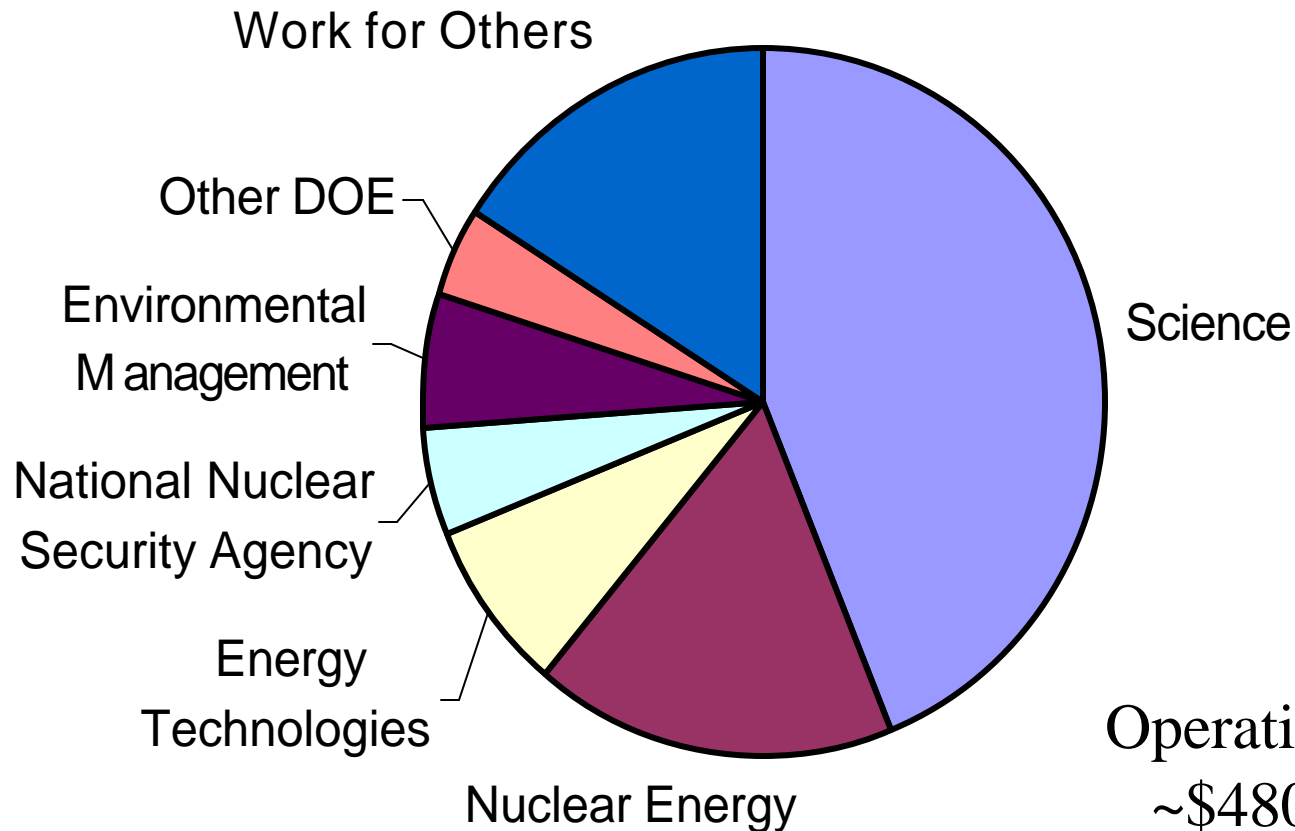
Pioneering Science and Technology

- Engineering and scientific expertise supporting the design, development, and evaluation of advanced nuclear energy systems and proliferation-resistant nuclear fuel-cycle technologies
- Design, construction, and operation of accelerator-based user facilities
- Fundamental science and engineering expertise
 - Materials and chemical sciences
 - High energy, nuclear, and atomic physics
 - Multidisciplinary nanoscience and nanotechnology
 - Structural biology, functional genomics, and bioinformatics
 - Environmental science and technology
 - Transportation technology
 - Computer science and applied mathematics

Broad R&D Portfolio Serving National Needs



Pioneering Science and Technology



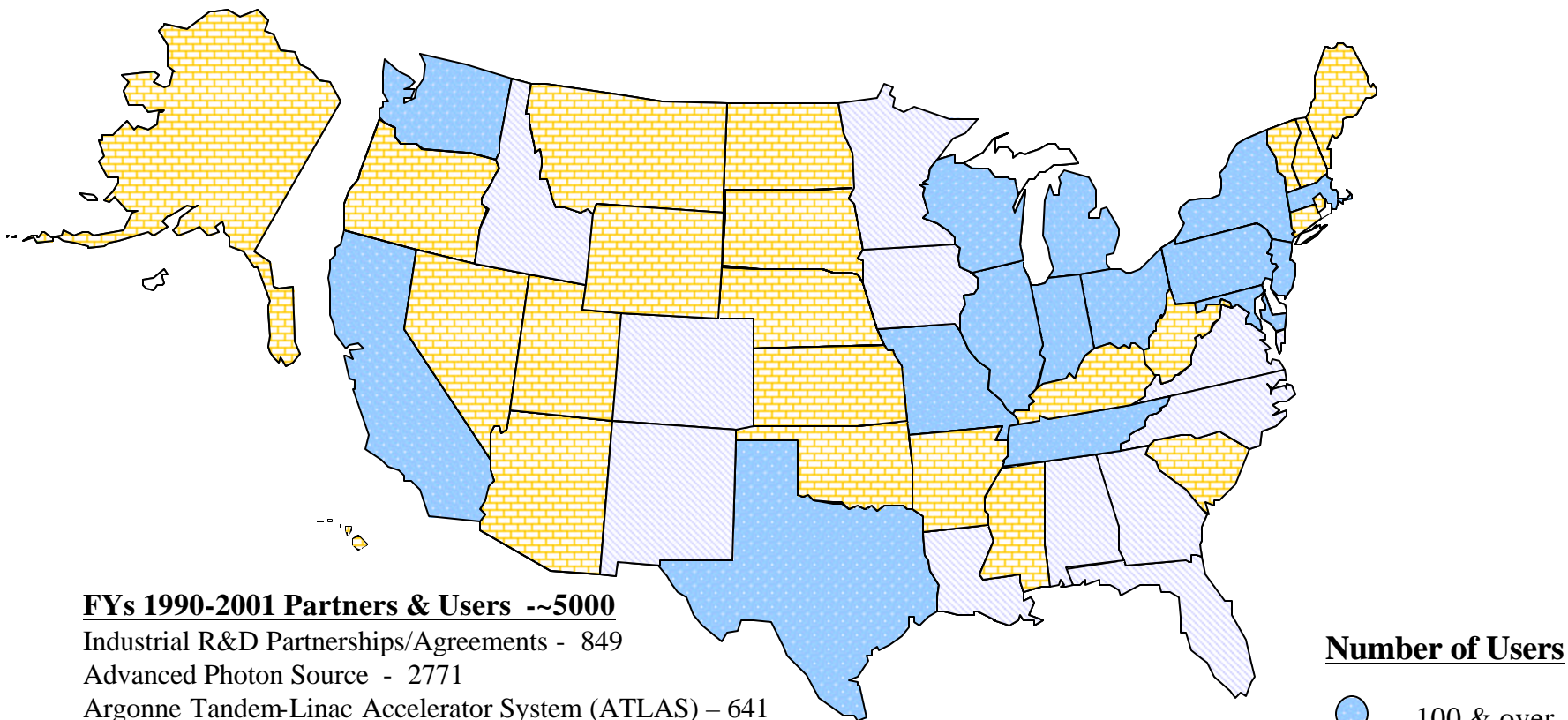
Argonne's Major Initiatives

Pioneering Science and Technology

- Nanoscience and nanotechnology
- Petascale computers & computational science
- Bioscience: functional genomics
- Rare Isotope Accelerator
- Advanced nuclear nuclear fuel cycle
- Homeland security

Partnerships With National Impact Through Technology Transfer

Argonne partners with industry, academic institutions, and scholars to transfer technology



FYs 1990-2001 Partners & Users ~5000

Industrial R&D Partnerships/Agreements - 849

Advanced Photon Source - 2771

Argonne Tandem-Linac Accelerator System (ATLAS) – 641

Intense Pulsed Neutron Source - 143

Electron Microscopy Center – 73

Structural Biology Center - 57

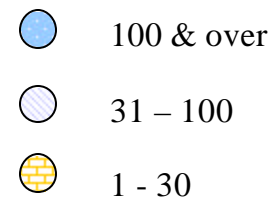
Atmospheric Radiation Measurement (ARM) - 65

Computational Science and Technology (CCST) - 107

Research Students - 330

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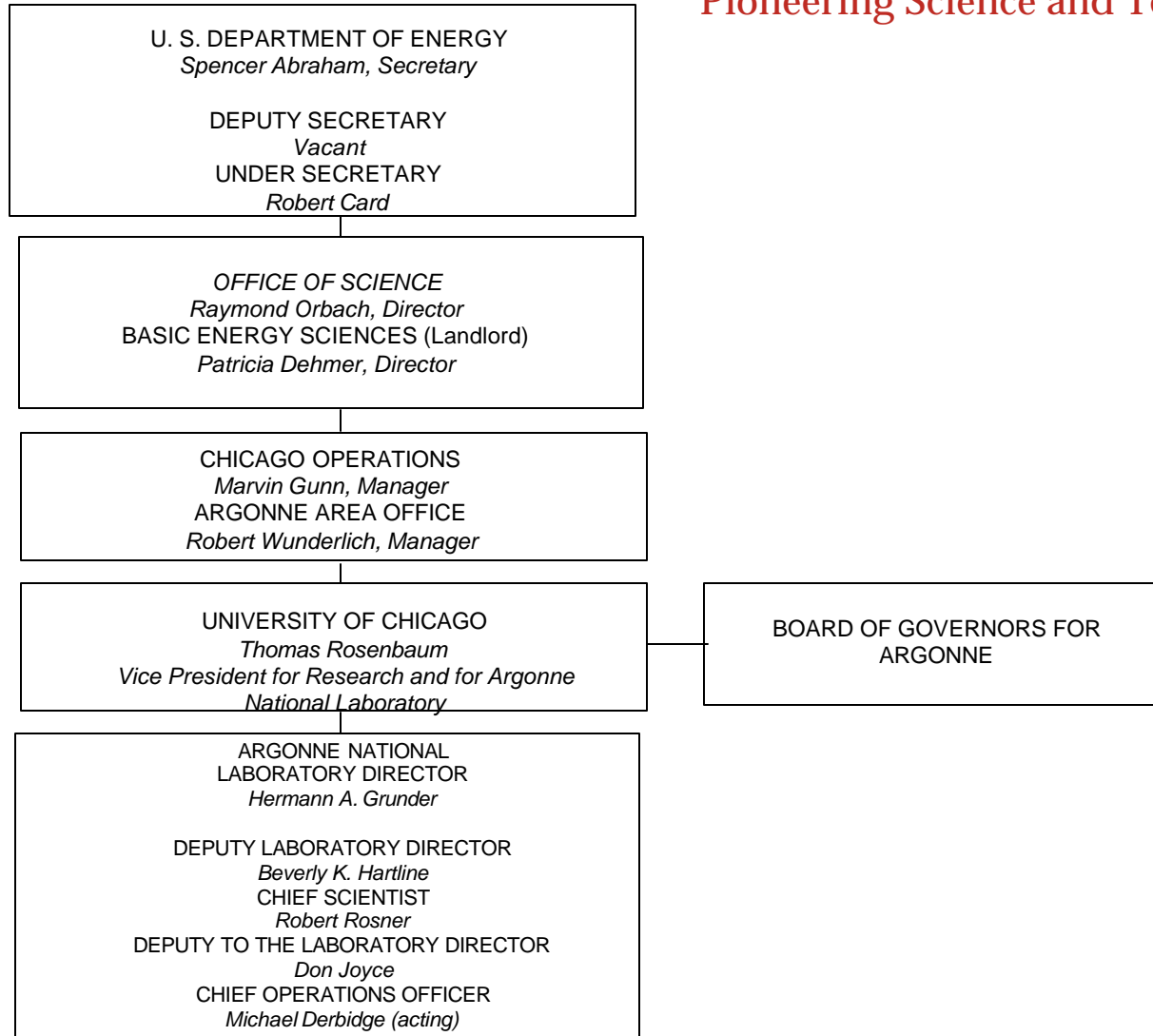
Number of Users



Argonne in DOE



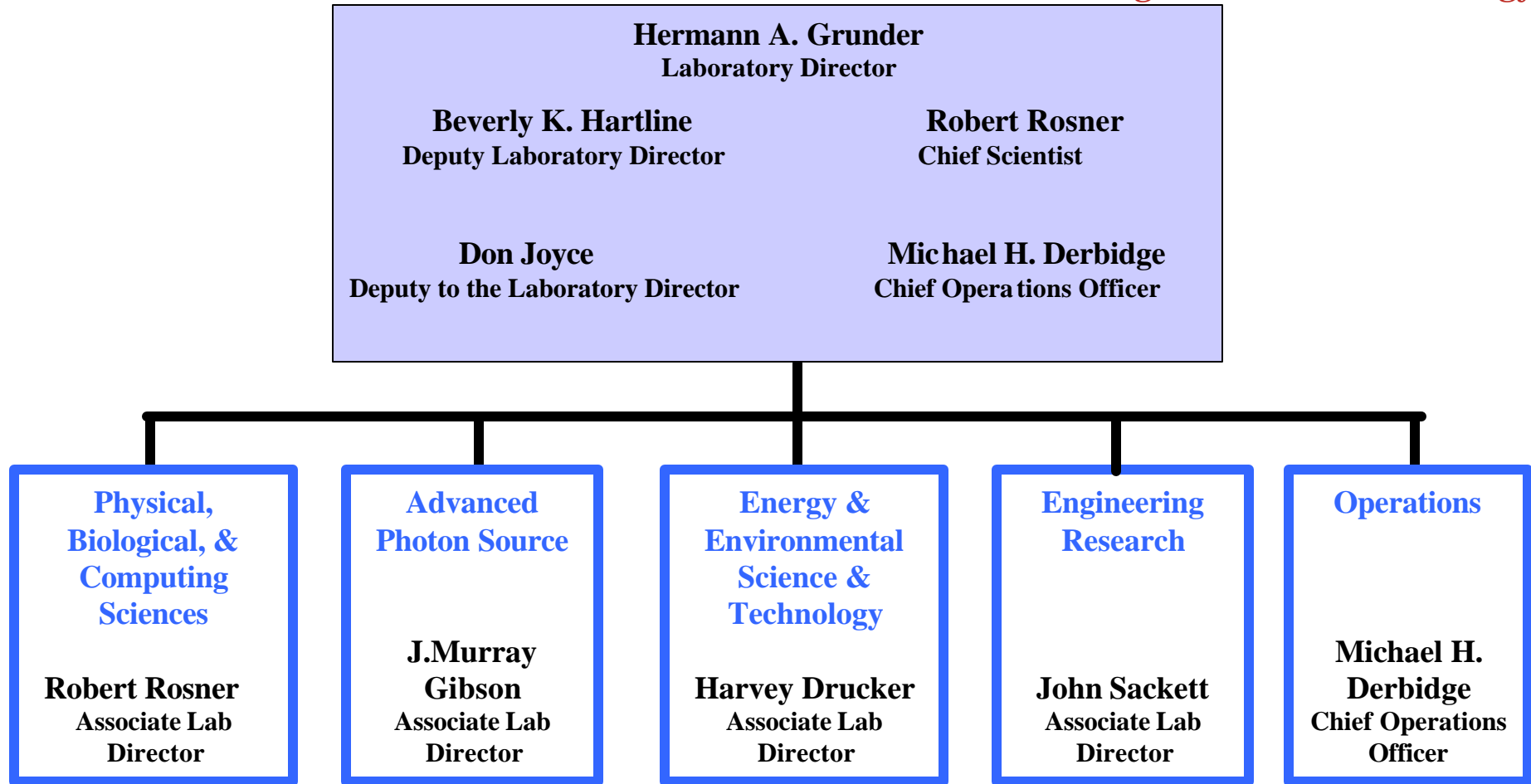
Pioneering Science and Technology



Argonne Organization



Pioneering Science and Technology



- 22 Scientific/technical divisions
- 10 Operations/support organizations



Advanced Photon Source



Pioneering Science and Technology

- **World's brightest x-ray source**
- **Facilities valued at \$1 billion**
- **76 beam lines**
- **~3000 users**
 - **Advanced materials science**
 - **Structural biology**
 - **Environmental science**
 - **Many other fields**

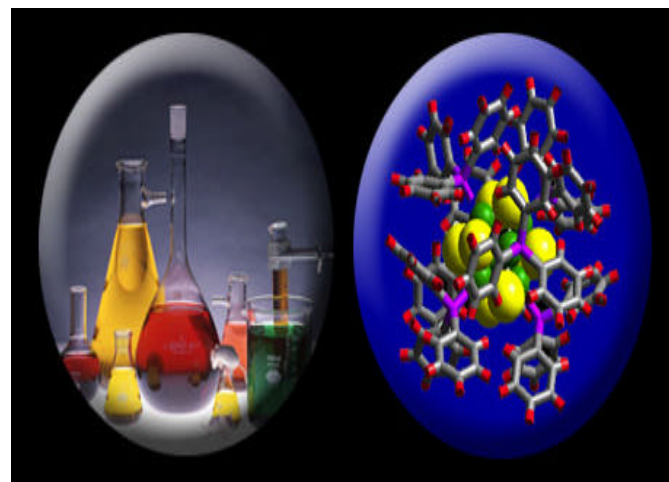
**Advanced
Photon
Source**



Physical, Biological, and Computing Sciences

Pioneering Science and Technology

- **Bioscience**
- **Chemistry and materials science**
- **Mathematics and computer science**
- **Nuclear and high energy physics**
- **Intense Pulsed Neutron Source**
- **Educational programs**

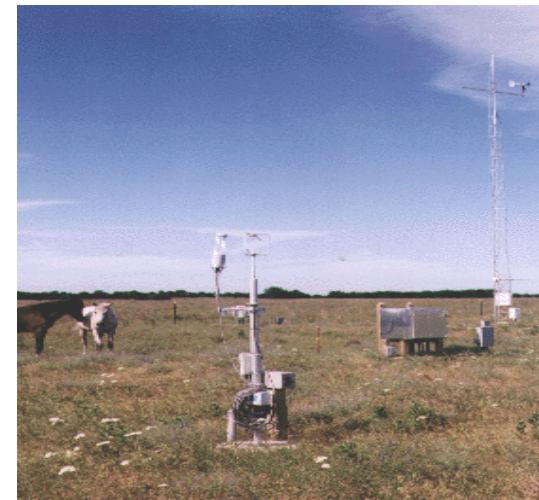


Energy and Environmental Science and Technology



Pioneering Science and Technology

- **Energy systems and technologies**
- **Environmental assessment, research, technology, and restoration**
- **Transportation, industrial energy and efficiency**
- **Decision and Information Sciences**
 - **Infrastructure Assurance Center**



Engineering Research

Pioneering Science and Technology

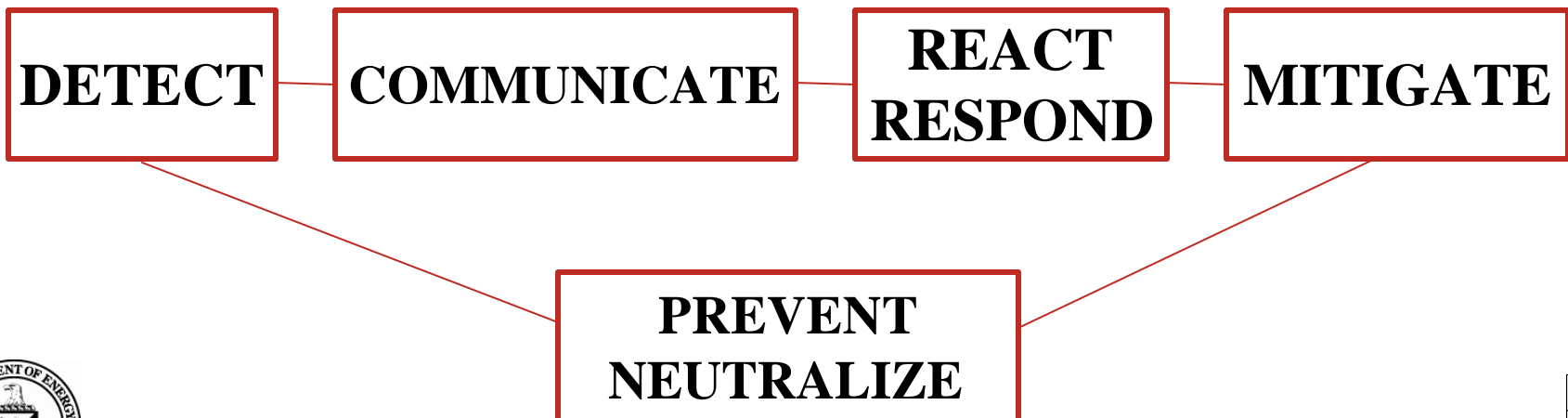
- **Advanced nuclear technology**
- **Chemical engineering and electrometallurgical technology**
- **Radioactive and mixed waste treatment technology**
- **Nuclear nonproliferation**
- **Nuclear facility decontamination and decommissioning**
- **A world leader in nuclear reactor and fuel cycle research.**



Argonne's Homeland Security Resources

Pioneering Science and Technology

- **Expertise, knowledge, technologies, and specialized research facilities developed over decades for other purposes**
 - **Nuclear**
 - **Chemical and biological**
 - **Systems-level risk analyses**
 - **Emergency preparedness and response**



Providing Tools and Solutions Through Partnerships



Pioneering Science and Technology

- Cooperative R&D agreements with industry
- R&D contracts utilizing unique ANL skills and technology
- Licensing results for commercial use
- Providing benefits through consortia
 - Advanced Transportation Technology Consortia
 - National Security Technology Partnerships
 - Central States Universities Consortium
- Start-ups & new ventures, working with industry & states
 - Innovative business models
 - Regional initiatives
- Technical service agreements to access unique facilities

For information: www.techtransfer.anl.gov



Future Workforce Development & Educational Outreach

Pioneering Science and Technology

Challenge: Enrich science education and help prepare tomorrow's scientists and engineers

Approach:

- **Research opportunities for undergraduates**
- **Research partnerships between faculty and Argonne**
- **Support of K-12 science education in the community**

